

Remarks

Applicant thanks the Examiner for the favor of a very productive interview, conducted on January 16, 2003 with the inventor and the undersigned. In that interview, we discussed the novel aspects of the invention, and particular claim language that distinguishes the present invention over the prior art. Applicants pointed out particular claim limitations that distinguish over the prior art in each of the independent claims as originally filed.

The claimed invention

The present invention includes methods of searching collections of linked objects and displaying the results. The invention is of particular utility when the links between objects (*e.g.*, legal citations or bibliographic references) themselves tend to convey useful information about the objects. According to the inventive methods, once a search group is acquired, the links from the target objects are used to determine at least one display attribute of the search set when it is displayed to the user. For example, links may be displayed as arrows or other connectors, or color, shape, size, position, highlighting, graphical flags, and/or labeling text may be used to convey information about the links.

Claim 16 has been amended herein to recite that annotatable search results are displayed on a graph. This amendment has been made solely in order to focus the issues in the present application, and is in no way intended to limit Applicant's right to pursue the originally-filed claim in this or any continuing application.

The prior art

Shah is directed to a metadatabase system for indexing heterogeneous groups of documents and images. The system allows searching of metadata to locate documents, and allows a user to associate objects with one another.

Shklar is directed to another system for representing data having heterogeneous types. The system tries to provide a uniform presentation format by analyzing the internal organization of the data (*e.g.*, into paragraphs, sections, articles, chapters, or frames), and displaying selected portions of the data.

Rejections under 35 U.S.C. § 102

Claims 1 and 16-20 stand rejected under 35 U.S.C. § 102(b) as anticipated by Shah. Applicant respectfully traverses this rejection for the reasons set forth below.

Claim 1 recites a method of searching a collection of linked objects and displaying the results. In particular, it includes “determining for at least a portion of the objects in the search group a set of targets of links from the objects.” When displaying a representation of one of the searched objects, the representation has “at least one display attribute determined by the set of link targets.” That is, some aspect of the display of the representation is automatically selected by the search engine by analysis of the links from the objects in the search set. For example, the color, shape, size, position, highlighting, graphical flags, and/or labeling text may be chosen to indicate links going from and/or to the object (claim 3). Search objects may be displayed on a graph (claim 4)¹. Links between objects may be displayed, for example, by a connector between object representations (claim 5).

In contrast, Shah is completely unconcerned with internal links between objects. Instead, it focuses on access to documents of different types using a metadata search. Thus, it does not perform either the step of determining link targets or of using the determined link targets to determine display attributes, and thus it cannot be considered to anticipate claim 1.

Independent claim 16, as amended herein, includes acquiring a group of search objects, and then attaching annotations to one or more members of the search result and displaying the result on a graph. These annotations may persist in subsequent searches (claim 17). In addition, objects that include links may have those links displayed as connectors (claim 19), and those connectors may themselves be annotated (claim 20).

As used in the present application, “annotation” is given its conventional, dictionary definition: to attach a notation to an object. Thus, as characterized by claim 16, the invention

¹ A “graph” is defined at page 4, lines 11-13, as a “two-dimensional or three-dimensional visual representation of linked objects, where a link is displayed as a connector.”

includes attaching text notes or the like to a search object or connector, for example so that these objects and connectors can be identified in subsequent searches.

Shah does not discuss annotation in the sense that the term is used in the present application. As used by Shah, “annotation” is the act of associating objects with one another on the system, rather than attaching notations (p. 21, col. 2, line 44). In addition, Shah does not disclose even the possibility that objects may have internal links to one another, let alone discuss displaying those links as connectors or annotating connectors. Nor does Shah disclose a graph containing object representations, as required by claim 16 as amended herein.

For at least these reasons, Applicant submits that Shah does not anticipate claims 1 and 16-20. Reconsideration and withdrawal of this rejection is therefore requested.

Rejections under 35 U.S.C. § 103

Claims 2-15 stand rejected under 35 U.S.C. § 103(a) as obvious over Shah in view of Shklar. Applicant respectfully traverses this rejection for the reasons set forth below.

Like claim 1, discussed above, independent claim 2 recites “determining for at least a portion of the objects in the search group a set of targets of links from the objects,” and displaying a representation of a search object “having at least one display attribute determined by the set of link targets.” Claims 3-15 depend either directly or indirectly from claims 1 and 2, and recite further patentable limitations thereon.

As discussed above, Shah is completely lacking even in the recognition that search objects may contain internal links, let alone a step of determining those links or a step of using the link targets to determine a display attribute. These deficiencies are not remedied by Shklar, which is relied upon solely to teach the use of display layers.

While Shklar describes *creating* links between certain documents (for example, hyperlinking to judge biographies from legal opinions), it does not describe extracting targets of links already in an object (such as legal or bibliographic citations). Further, there is no description of using these links to determine display attributes. In fact, a characteristic display according to the system of Shklar, as shown in Fig. 10, has exactly the deficiencies that the

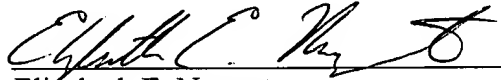
present invention seeks to remove. It simply displays a list of Supreme Court opinion, without giving the user any indication of how they may be linked by citations to one another.

Applicant also notes that “display layers,” as used in the present application, are significantly different from the abbreviated displays described in Shklar, and more akin to the display layers more typically used in high-end illustration software. As described by the Applicant at page 7, lines 1-11, layers may be used in the present invention in order to allow the user to selectively exclude or otherwise visually modify objects and/or connectors meeting certain defined criteria. For example, a user may, at the touch of a button, exclude district court cases from a display, viewing only appellate and Supreme Court cases in a particular search, without actually modifying the search result – only the display of objects and connectors is affected.

Since neither Shah nor Shklar describes or suggests either the steps of determining links from objects in a search set, or of basing a display attribute on such determined links, the cited references cannot render the pending claims obvious. Reconsideration and withdrawal of this rejection is therefore requested.

In view of the above remarks, Applicant submits that the present case is in condition for allowance. Notice to that effect is therefore earnestly requested. Should the case not be determined to be allowable at this time, the Examiner is requested to contact the undersigned at (617) 248-4051 to discuss any changes. Please charge any fees associated with this filing, or apply any credits, to our Deposit Account No. 03-1721.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Elizabeth E. Nugent", written over a horizontal line.

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